Draft Summary of the Engineering and Operations Work Group Meeting
Oroville Facilities Relicensing (FERC Project No. 2100)
February 21, 2003

The Department of Water Resources (DWR) hosted the Engineering and Operations Work Group meeting on February 21, 2003 in Oroville.

A summary of the discussions, decisions made, and action items is provided below. This summary is not intended to be a transcript, analysis of the meeting, or to indicate agreement or disagreement with any of the items summarized, except where expressly stated. The intent is to present an informational summary for interested parties who could not attend the meeting. The following attachments are provided with this summary:

Attachment 1 Meeting Agenda
Attachment 2 Meeting Attendees
Attachment 3 Data Disaggregation Presentation
Attachment 4 Butte County watershed modeling letter to DWR
Attachment 5 Butte County Groundwater and Modeling Elements Scope of Work
Attachment 6 Butte County Integrated Watershed and Resource Conservation Plan Scope of Work
Attachment 7 Operations Modeling Update – February 20, 2003
Attachment 8 Oroville Cold Water Pool Analysis

Introduction

Attendees were welcomed to the Engineering and Operations Work Group meeting. The meeting agenda and desired outcomes were reviewed. The meeting agenda and list of meeting attendees and their affiliations are appended to this summary as Attachments 1 and 2, respectively.

January 31, 2003 Meeting Summary and Action Items

A summary of the January 31, 2003 Engineering and Operations Work Group is posted on the relicensing web site. The Facilitator reviewed the status of action items from that meeting as follows:

Action Item EO#63	Distribute model summaries that were distributed to the Plenary Group to Engineering and Operations Work Group.
Responsible:	DWR
Status:	Curtis Creel, DWR Resource Area Manager (RAM) for operations was unclear on whether the summaries were distributed so he will confirm. If they have not been distributed, they will be sent electronically as soon as possible.
Action Item EO#64	Distribute interim reports on temperature modeling and cold water pool analysis for review in advance of next Engineering and Operations Work Group meeting.
Responsible:	DWR
Status:	Bill Smith, technical lead for the consulting team will discuss the temperature modeling and cold water pool analysis later in the meeting (see discussion below).
Action Item EO#65	Distribute Ed Craddock, Butte County letter regarding watershed modeling.
Responsible:	DWR
Status:	Ed Craddock brought copies of the letter for distribution.

Action Item EO#66	Distribute update on operations modeling.
Responsible:	DWR
Status:	Curtis Creel brought updates for distribution and discussion later in the meeting (see discussion below).

Hydrology Data Discussion

Art Hinojosa with DWR described the process of CALSIM II data disaggregation for use in the local operations and temperature models. He explained that the monthly values need to be disaggregated into weekly or daily values within three categories: (1) Oroville inflows/diversions; (2) downstream river inflows/diversions for temperature modeling; and (3) operation results for the weekly local operations model. Art suggested that when converting from monthly to daily values, identifying a pattern for inflow into Lake Oroville may not be necessary and in fact history suggests there is no typical pattern. He proposed converting the monthly mean to daily using a constant average. Art's presentation is included as Attachment 3 to this summary.

Derek Hilts representing USFWS asked if there was a bridge between the CALSIM II and the Fluvial 12 model. Koll Buer representing DWR responded that Fluvial 12 is interested in flows that are moving bedload in the range of 6,000 cfs to10,000 cfs with the focus on flows above 10,000 cfs. He explained that Fluvial 12 would use historical data for the storms that occurred between 1967 and 2002. Once the model is calibrated to historical data, flow scenarios can be run through the model. Ken Kules representing Metropolitan Water District stated that the exception would be a scenario that changes flood operations but Bill Lewis countered that Study Plan E4 does include an evaluation of flood control options.

Derek suggested that using monthly averages for inflows tends to overestimate power generation, and spikes may show water that is not available to use. Curtis responded that such a situation rarely happens so is of little consequence. Robert Hughes of DFG asked if there were other data sets available, and Curtis responded that CALSIM II considers all of the system constraints making comparisons easier. Robert Hughes asked if specific flow regimes for the low flow channel could be modeled using the local operations model. Curtis responded that yes, specific scenarios can be entered manually into the model and should not take long to simulate. The participants agreed that Art's approach would cover the majority of issues, and the rest would be accommodated by manually manipulating the model inputs. The participants agreed that the flow duration curve would be of use for low flow events but higher flows would be individually modeled. The participants agreed to use the CALSIM II data disaggregation approach outlined by Art with the understanding that individual runs with specific inputs will be modeled. The group also suggested that when presenting the modeling results to others, the hydrology used should be fully explained. Curtis suggested that such information should be included in the modeling documentation provided to the collaborative by the Modeling Protocol Task Force.

Curtis concluded the discussion by reiterating the need to coordinate with the other Work Groups and noted that he had already contacted the Recreation and Socioeconomics Work Group concerning their needs.

Watershed Modeling Update – Butte County letter

Ed Craddock distributed copies of his letter to DWR regarding watershed modeling that was discussed at the last Engineering and Operations Work Group meeting (see January 31, 2003 meeting summary). He also provided copies of Butte County scopes of work for groundwater and watershed modeling elements and development of an integrated watershed model. The three documents are provided as Attachments 4, 5, and 6 to this summary. Ed explained that the County is taking a long-term planning perspective for its watershed and is interested in partnering to bring federal, state or local dollars to that effort.

Modeling Update
Curtis Creel distributed a document updating the status of the various operations models (see Attachment 7). CALSIM II is complete and ready to use. DWR is prepared to use existing benchmark studies for an existing conditions analysis and would like to 'lock' the existing conditions study as of the end of February 2003. Powel Technologies has begun development of the local operations model using HYDROPS, and modelers are starting to process DWR's Oroville operational data. Curtis estimates this model will be complete by the end of April 2003.

Major work has been completed on two of the three primary components of the temperature model. The next step is to complete the Thermalito Complex model and begin work on the Feather River temperature component. Curtis estimates this model will be complete by the end of June 2003. Lastly, the flow-stage model needed to develop relationships for low flow conditions is ahead of schedule and expected to be completed by the end of March 2003.

Oroville Cold Water Pool Analysis
Bill Smith of SWRI gave a presentation on cold water pool analysis for the Oroville Facilities; the analysis was done pursuant to Study Plan E-7. He provided an overview of his methodology and explained the approach used to develop the temperature data and analysis. The cold water pool analysis presentation is included as part of this summary as Attachment 8.

Next Steps
The Engineering and Operations Work Group agreed their next meeting would be:

Date:	March 28, 2003
Time:	10:00 a.m. – 12:00 p.m.
Location:	Video Conference between OFD, JOC, Room 601, MWD, SJFD with call in capabilities

Action Item
The following action item was identified by the Engineering and Operations Work Group and includes a description of the action, the participant responsible for the action, and due date.

Action Item EO#67	Review SP-E4 for language regarding flood control evaluations.
Responsible:	DWR
Due Date:	March 28, 2003